



Magnetic suppression of Bremsstrahlung emission in the relativistic transparency regime

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High-power laser-plasma interaction in the relativistic-transparency regime offers unprecedented prospects to generate extreme quasi-static magnetic fields [1]. While these MT level magnetic fields boost considerably the Synchrotron photon emission efficiency [1-3], they also lead to enhanced electron acceleration [4]. In this context, we investigate the role of Bremsstrahlung emission using PIC- simulations with the EPOCH (2D) code in the relativistic-transparency regime. We found that high energy electron's emission of Bremsstrahlung is significantly suppressed when considering the magnetic field as an environmental factor [5]. Magnetic suppression of Bremsstrahlung reduces the emission probability of low energy photons, and it was considered by including the correction of differential and total cross-section as the function of the magnetic field strength and electron energies to the EPOCH PIC-simulation code.

References

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